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De Cremer, D.; Knippenberg, D.

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# Cooperation as a function of leader self-sacrifice, trust, and identification

Self-sacrifice,  
trust, and  
identification

355

David De Cremer

*Department of Economic and Social Psychology, Tilburg University, Tilburg,  
The Netherlands, and*

Daan van Knippenberg

*Rotterdam School of Management, Erasmus University Rotterdam, Rotterdam,  
The Netherlands*

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## Abstract

**Purpose** – To examine the psychological processes underlying the effect of leaders' self-sacrifice on follower cooperation, that is, trust and collective identification.

**Design/methodology/approach** – The main effect of leader self-sacrifice was tested on people's willingness to cooperate. In addition, people's perceptions of trust and collective identification were assessed. These effects were tested using a public good experiment, and a cross-sectional survey in a German multinational company.

**Findings** – The findings from both the experimental study and the cross-sectional survey showed that leader self-sacrifice has a positive effect on cooperation (measured by contributions in a public good dilemma and organizational citizenship behavior in the survey). Moreover, perceptions of trust in the leader and feelings of collective identification mediated this effect of self-sacrifice.

**Practical implications** – The present finding indicates that organizations need to focus on and implement leadership styles based on self-sacrifice. It is suggested that one possible way to do this is to train managers more effectively in how they can clearly communicate the goals that they personally value and for the achievement of which they are willing to engage in sacrificial behavior.

**Originality/value** – This research identifies important mediators of a leadership style considered to be effective in organizations. In addition, the findings of this research also show the usefulness of both experimental paradigms and survey studies to examine the issue of leader self-sacrifice.

**Keywords** Leadership, Management styles, Employee behaviour, Motivation (psychology)

**Paper type** Research paper

One of the core functions of leadership is to motivate individuals to cooperate towards collective goals (Chemers, 2001; Hogan *et al.*, 1994). Despite the obvious importance of cooperation to the collective's success (Smith *et al.*, 1995; Van Vugt *et al.*, 2000), employees do not engage in cooperative acts easily. Because cooperation comes at personal costs (i.e. time, effort, resources), self-interested motives may lead individuals to favor non-cooperation over cooperation, especially when one can enjoy the fruits of collective effort without (fully) contributing oneself (Komorita and Parks, 1994; Kramer, 1991). Accordingly, leaders' ability to motivate individuals beyond



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self-interest is of key importance to the effectiveness of groups and organizations (Bass, 1985). In the present study, we focus on an aspect of leader behavior that is receiving increasing attention as a means of promoting cooperation: leader self-sacrifice on behalf of the group (Choi and Mai-Dalton, 1998, 1999; Conger and Kanungo, 1987; De Cremer, 2002; De Cremer and van Knippenberg, 2002; Yorges *et al.*, 1999). Specifically, we focus on the role that trust in the leader plays in mediating the effects of leader self-sacrifice on follower cooperation.

### **Leader self-sacrifice, trust in the leader, and follower cooperation**

Anecdotal analyses of (charismatic) leadership suggest that self-sacrificial behavior contributes substantially to leadership effectiveness (Choi and Mai-Dalton, 1998), and indeed self-sacrifice has been proposed to be an important component of charismatic leadership (Conger and Kanungo, 1987; Yorges *et al.*, 1999)[1]. Empirical research has confirmed this relationship between leader self-sacrifice and leadership effectiveness. Yorges *et al.* (1999) demonstrated that a self-sacrificing leader was perceived to be more charismatic and more influential than a self-benefiting leader (i.e. the opposite of self-sacrificing), and was able to motivate followers to contribute to a charity fund. In a similar vein, De Cremer (2002) and De Cremer and van Knippenberg (2002) showed that a self-sacrificing leader, compared with a self-benefiting leader, elicited more cooperation in a public good dilemma, and van Knippenberg and van Knippenberg (2005) showed that a self-sacrificing leader, compared with a non-sacrificing leader, elicited higher levels of performance on behalf of the group.

There thus is converging evidence that self-sacrificing leaders, compared with self-benefiting or non-sacrificing leaders, are better able to motivate group members to cooperate with the collective. The question of which psychological processes underlie the effectiveness of leader self-sacrifice in engendering follower cooperation is, however, still largely unaddressed in empirical research, and process-oriented research is needed to advance our understanding of leadership effectiveness (Hunt, 1999). In fact, Yukl (1999) noted that “(charismatic) leadership theories would be improved by a better explanation of the underlying influence processes” (p. 295). This is the question the present study aims to address.

As one of the first systematic attempts to empirically address this process-oriented question, we wish to propose that a first key process that plays a role in explaining the psychology of self-sacrificing leadership is trust in the leader. Leaders typically have more power over the group and group resources than other group members, and, therefore, have the important job of representing the group and making decisions on behalf of the group. As a result, from the perspective of followers, the extent to which the leader can be trusted to have the group’s and the group members’ best interest at heart should be a key concern in their attitude towards the leader. Leader self-sacrifice, and the associated personal costs and risks for the leader, indicate leader’s commitment to the goals and mission of the group or organization (Conger and Kanungo, 1987; Shamir *et al.*, 1993; van Knippenberg and Hogg, 2003), and may, therefore, be expected to enhance trust in the leader. As a result, due to these increased perceptions of trust, self-sacrificing leaders provide an important clue that interacting or complying with them is safe, thus reinforcing intrinsic motivation to go beyond self-interest (Bass, 1985; De Cremer, 2002). Such a trustworthy leader also communicates that the

intentions of the leader in the future will be likely to be fair and honest, thereby reducing fear of exploitation.

Corroborating our argument that enhanced trust in the leader may underlie the effects of leader self-sacrifice, trust has been shown to be related to cooperation. Research consistently shows that the more trust people experience the more willing they are to go beyond their own self-interest (Brann and Foddy, 1987; De Cremer *et al.*, 2001; Kramer and Goldman, 1995). Particularly relevant to the present discussion, a study by Podsakoff *et al.* (1990) found that trust mediated the relationship between transformational leadership and follower organizational citizenship behavior (OCB), a form of cooperation (Katz, 1964; Organ, 1988). Although Podsakoff *et al.* did not focus on leader self-sacrifice, their study does suggest that trust may play a role in translating leader behavior into follower action (Pillai and Meindl, 1998), and thus provides circumstantial evidence for our argument that trust may mediate the effect of leader's self-sacrifice on follower cooperation.

### The present study

To summarize, then, we put forward the following hypotheses.

- H1.* A self-sacrificing leader elicits more cooperation than a self-benefiting leader.
- H2.* A self-sacrificing leader elicits more trust than a self-benefiting leader.
- H3.* Trust in the leader mediates the effect of self-sacrifice on cooperation.

We tested these hypotheses in a laboratory experiment (Study 1) and a correlational survey (Study 2). The laboratory experiment allowed us to draw conclusions concerning causality while maintaining a relatively high degree of mundane realism, while the survey study allowed us to extend our study to people in an actual organization. This combination of methods allowed us to benefit from the strengths of each method, and to compensate for the weaknesses of each method with the strengths of the other methods (Dipboye, 1990).

In order to examine cooperation experimentally, Study 1 employed the public good paradigm (Komorita and Parks, 1994). Public good dilemmas represent the conflict between personal and collective interests often observed in group and organizational settings (Kramer, 1991), and as such are highly relevant to the assessment of leadership effectiveness in engendering cooperation (De Cremer and van Knippenberg, 2002, 2003). In this paradigm, group members are asked to contribute towards the establishment of a public good (e.g. contributing time and effort to a team project, investing departmental money to achieve a higher outcome for the company). Provision of the good provides each group member with a personal benefit. Once the public good is provided, however, every group member can benefit, regardless of his or her contributions. This impossibility of exclusion (Olson, 1965) leads individuals to think that it is possible to consume the good even without contributing substantially to its provision. It is thus in one's personal interest not to contribute (Dawes, 1980). However, if all people would adopt such a self-interested perspective, nobody would contribute, and the public good would not be provided. In other words, the emergence

of cooperation may thus be problematic, because the pursuit of personal self-interest may lead to non-cooperation.

In Study 2, we operationalized cooperation as interpersonal helping, a form of OCB (Podsakoff *et al.*, 2000). OCB like interpersonal helping refers to activities that go beyond job requirements and benefit others or the collective without necessarily benefiting the individual (Organ, 1988). OCB like interpersonal helping has been argued to reflect the organizational cooperative behavior Katz (1964) and others alluded to (Organ, 1988). Moreover, because interpersonal helping, and OCB in general, may benefit the collective without necessarily benefiting the self, and one may benefit from others' OCB without engaging in OCB oneself, engagement in OCB like interpersonal helping arguably reflects the trade-off between personal and collective interest typical for public good dilemmas (De Cremer and van Knippenberg, 2002) – an element that makes it easier to compare the findings of Study 1 to those of Study 2. As a case in point, previous research has shown that leader self-sacrifice is related to both OCB and contributions in a public good dilemma (De Cremer and van Knippenberg, 2002).

## Study 1

### *Method*

*Participants and design.* A total of 117 undergraduate students at a Dutch University participated voluntarily in exchange for course credits (all participants had the Dutch nationality). They were randomly assigned to either the self-sacrificing condition or the self-benefiting condition.

### *Procedure*

Upon arrival in the laboratory (after being contacted via phone by the research assistant running the experimental study), participants were placed in separate experimental cubicles and were each given a package that included the materials for the case study. Following earlier research on employing the social dilemma paradigm among students, we also decided to use a case study in which participants at the end of the study were asked to make financial decisions based on the information provided in the case (Aquino *et al.*, 1992; White Blount, 1994).

More precisely, participants were told that they would perform the role of a manager (i.e. being a departmental head) in a working group (consisting of six members) called Tel-market. Then, some information (which was said to be hypothetical) about their working group was presented. Participants read that Tel-market had a good position within the international trade market and that the company was doing quite well. However, due to economic changes and bad investments, the company was suffering some problems. Due to these problems, the CEO of the company decides to introduce some changes.

After this information, the self-sacrifice manipulation was introduced (based on prior research of Choi and Mai-Dalton (1999), De Cremer (2002) and Yorges *et al.* (1999)). In the self-sacrificing condition, participants read the following about their CEO (which was the group member appointed to be the group leader by the experimenter):

This manager will reduce his salary to the basic salary of an ordinary employee. He will also forgo all benefits that a top-manager usually gets like extra bonuses in case of good

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performance. Also, he decides to cancel all the privileges that top-managers received, like, for example, separate parking space and separate lunchrooms. In addition, he devotes almost all his time to trying to solve the crisis in the company. Because of this, he even has to stop coaching the football team of his son.

In the self-benefiting condition, the scenario said the following:

This manager decides to take 10 percent of the company budget to cover his personal costs, because he thinks that his task in this crisis is a difficult one. Due to taking precautionary measures and the hard work of others, this manager comes in contact with other companies and new investors. Due to these contacts, he obtains a lot of personal benefits and is able to negotiate several interesting offers. His position is definitely assured for the years to come! He still takes up his annual holiday and writes a report to the heads of departments describing their tasks during his absence.

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**359**

After participants read this information, a business scenario with the properties of a step-level public goods dilemma was introduced (Van de Kragt *et al.*, 1983). Participants were informed that the five departmental heads (participants were told that they were one of these departmental heads) had to search for some solutions on how to cope with the crisis. Further, in order to meet this crisis, the company manager (i.e. the CEO as described above) was said to introduce a new investment plan that would serve the interests of the company and at the same time also the interests of the five other managers and their departments. Participants were informed that each department has a financial resource (this resource belonged to the department of each respective manager and thus was not the property of the whole company) that they could contribute to the investment program as constructed by the company manager and which would also be supervised by this manager. The resource that each department has is 7,500 euros (about 8,000 US dollars). Participants were told that according to the company manager's investment plan each department could contribute some or all of the resources received into this plan. To provide an incentive for the participants, they were informed that after the study, their decisions would be evaluated by the experimenter and that a reward of 20 euros (approximately 25 US dollars) would be given to the best manager. This evaluation would be based on how much each manager obtained from his or her investments (i.e. the money contributed and the money received from the bonus cf. Aquino *et al.*, 1992; De Cremer *et al.*, 2001).

They were told that if the sum of the investments (in this case the sum of the five managers) equaled or exceeded 30,000 euros (about 32,000 US dollars), the money they invested would be doubled and then the company manager would decide how to distribute this money amongst all five departments (i.e. this way a sense of interdependence with the leader was reinforced!). Thus, in this case, all managers would receive part of the investment bonus (determined by the company manager), regardless of their contribution. However, if the total sum invested was less than 30,000 euros, then all investments would be lost as sunk costs. Thus, each manager could lose his or her investment if the group as a whole did not contribute enough.

This game structure fits the properties of a public good dilemma because if participants kept their endowment, then the value of this endowment was definitely theirs, and if the group was successful they would receive part of the group bonus as well (as determined by the company manager). However, if the group failed then those who contributed would lose their endowment, and the others who kept their endowment would lose or gain nothing. This situation is thus characterized by

impossibility of exclusion in a sense that once the bonus is provided anyone can enjoy it, regardless whether he or she contributed or not. This property creates a temptation for participants to free ride, that is, to profit from the contributions of others without making a contribution themselves. As such, this game represents an experimental tool paralleling many organizational situations and allows one to examine people's willingness to cooperate with the leader and not to engage in the act of free-riding (De Cremer and van Knippenberg, 2002, 2003).

After this was explained, the dependent measures were introduced. All the items were answered on a seven-point scale, ranging from very much so (1) to not at all (7). To check for the effectiveness of the self-sacrifice manipulation, participants were asked whether the company manager undertakes self-sacrificing activities in pursuing the organizational objectives. To assess trust in the leader, two questions were asked:

- (1) "To what extent do you trust the company manager to successfully solve this investment task"; and
- (2) "To what extent do you trust the company manager to successfully motivate the heads of department?" ( $r = 0.60$ ,  $p < 0.001$ ).

Then, the behavioral measure was assessed by asking participants how much they wished to invest (ranging from 0 to 7,500 euros). Finally, participants were thanked, debriefed and dismissed.

### Results

*Manipulation check.* A one-way ANOVA on the self-sacrifice measure showed that the self-benefiting leader was perceived as less self-sacrificing than a self-sacrificing leader ( $M_s = 2.45$  vs  $5.00$ ,  $SD_s = 1.78$  and  $1.62$ , respectively),  $F(1, 114) = 64.68$ ,  $p < 0.001$ . Thus, our manipulation was successful.

*Contributions.* A one-way ANOVA on the contributions to the investment plan showed that participants in the self-sacrificing leader condition invested more than in the self-benefiting leader conditions ( $M_s = 5106.48$  vs  $3568.25$ ,  $SD_s = 1965.86$  and  $2407.01$ , respectively),  $F(1, 115) = 14.02$ ,  $p < 0.001$ .

*Trust in the leader.* A one-way ANOVA on the trust score showed that a self-benefiting leader elicited less trust than a self-sacrificing leader ( $M_s = 4.28$  vs  $3.03$ ,  $SD_s = 1.31$  and  $1.11$ , respectively),  $F(1, 115) = 30.00$ ,  $p < 0.001$ .

*Mediation analysis.* To test for the mediating role of trust, we conducted an ANCOVA of the contributions to the collective using trust as a covariate. This analysis revealed a significant effect for the covariate,  $F(1, 114) = 11.42$ ,  $p < 0.001$ , showing that trust in the leader was positively related to contributions to the collective. With trust in the leader added to the design, the effect of leader self-sacrifice on contributions disappeared,  $F(1, 114) = 3.78$ ,  $p < 0.06$ . A calculation of the Sobel-test (Sobel, 1982) showed that the reduction of the effect of self-sacrifice was significant,  $z = -2.87$ ,  $p < 0.005$ , suggesting that trust mediated the effect of self-sacrifice on cooperation.

### Study 2

Study 1 supports our hypothesis that trust mediates the effect of leader self-sacrifice on follower cooperation. An important feature of Study 1 is its experimental nature, allowing us to draw conclusions about causality for the sacrifice-cooperation and sacrifice-trust relationships. Moreover, Study 1 also provides much needed



experimental evidence for the reasoning that leaders are able to promote cooperation in public good dilemmas by exhibiting self-sacrifice (De Cremer, 2002). Even so, an obvious question is whether these effects may also be observed in a field setting. Study 2 was designed to address that question. Following De Cremer and van Knippenberg (2002), Katz (1964) and Organ (1988), we operationalized cooperation as OCB, specifically interpersonal helping (Organ, 1988; Podsakoff *et al.*, 2000).

Another difference with Study 1 is that we also addressed the relevance of another potential mediator. Study 1 shows that trust mediated the effect of self-sacrificing leader behavior, but this does not mean that other potential mediators may not also play a role. Indeed, recently, De Cremer and van Knippenberg (2002) demonstrated that a self-sacrificing leader promoted cooperation because it enhanced feelings of collective identification. This observation is in line with the House (1977) and Shamir *et al.* (1993) theoretical analyses that identify “emphasizing a collective identity” as one of the key behaviors of charismatic leaders such as those who self-sacrifice.

Moreover, following social identity analyses of leadership (Hogg, 2001; Hogg and van Knippenberg, 2003; van Knippenberg and Hogg, 2003) the reason why a self-sacrificial leader is able to motivate followers to go beyond their self-interest and to look to the welfare of the collective is that this type of leader links followers’ sense of identity to the organization and its mission and goals (Lord *et al.*, 1999). By exhibiting self-sacrificial behavior on behalf of the collective, the leader may render the collective and the collective goals and interests salient to followers, and identify the collective as worthy of individuals’ dedicated efforts. Both the salience of the collective identity and the suggestion that the collective is worthy of one’s dedicated effort may promote identification with the collective among followers (Hogg and Abrams, 1988).

Finally, both processes of trust in the leader and collective identification may be recognized as valid mediators, because research on intergroup relations has provided evidence that trust and collective identification are strongly correlated (Brewer, 1981; Kramer and Goldman, 1995). In fact, the literature on social identity suggests that identification with the in-group installs positive beliefs about this in-group and as such influences trust (Hogg and Terry, 2000; Hogg and Abrams, 1988). Thus, it may well not be the case that only trusts or only collective identification mediates the effect of a self-sacrificing leader, but rather both processes. Therefore, in Study 2, we examined the extent to which both trust in the leader and organizational identification mediate the effect of a self-sacrificing leader.

To summarize, in Study 2, in addition to our previous hypotheses, we also predicted the following:

*H4.* A self-sacrificing leader promotes collective identification more than a self-benefiting leader.

*H5.* Collective identification mediates the effect of self-sacrifice on cooperation.

### *Method*

*Sample.* The study was conducted at a multinational company in Germany. This company is a major producer of medicines and medical equipment. Employees of four different production departments were approached to complete a questionnaire



containing the scales as described below. A research assistant (supervised by the first author while doing his probation period at this company) handed over the surveys to the employees of each department and those who agreed to participate mailed the completed surveys directly to the research assistant. In total, 198 employees (out of the 250 asked, meaning a response rate of 79 percent) were willing to participate and complete the questionnaire. All employees had the German nationality. Eighty-seven percent of the respondents were male, 11 percent female (2 percent could not be identified), and 65 percent of respondents were between 31 and 50 years of age.

*Dependent measures.* All items were answered on five-point scales (1 = not at all, 5 = very much so).

*Self-sacrifice.* Self-sacrifice was assessed with two items (taken from Conger and Kanungo, 1998), including “My supervisor takes high personal risks for the sake of the organization” and “My supervisor, in pursuing organizational objectives, engages in activities involving considerable self-sacrifice”. Items were combined to form one average self-sacrifice score ( $r = 0.62, p < 0.001$ ).

*Trust in the leader.* Two questions were asked (taken from Conger and Kanungo, 1998): “Others have complete faith in my supervisor” and “People trust my supervisor’s ability to overcome any obstacles”. Items were combined to form one average confidence score ( $r = 0.61, p < 0.001$ ).

*Organizational identification.* To assess perceptions of collective identification we used two items measuring collective identification (taken from Mael and Ashforth, 1992): “When I talk about this organization, I usually say we rather than they”, and “I am very interested in what others think about my organization”. Items were combined to form one average organizational identification score ( $r = 0.58, p < 0.001$ ).

*Interpersonal helping.* Interpersonal helping was assessed with two items from Moorman and Blakely’s (1995) interpersonal helping scale, “I am considerate towards and involved with my colleagues, even if I have heavy work loads”, and “I regularly make suggestions on how to improve the work (of the group)”. Items were combined to form an average interpersonal helping score ( $r = 0.23, p < 0.05$ ).

Results

Means, standard deviations, and intercorrelations for the study variables are displayed in Table I. We used regression analysis to test our hypotheses. An analysis with self-sacrifice as the predictor of interpersonal helping showed that self-sacrifice was positively related to interpersonal helping,  $\beta = 0.26, p < 0.001$ . A second analysis with self-sacrifice as the predictor of trust showed that self-sacrifice also was significantly related to trust in the leader,  $\beta = 0.65, p < 0.001$ . A third analysis with self-sacrifice as the predictor of organizational identification showed that self-sacrifice was significantly related to organizational identification,  $\beta = 0.29, p < 0.001$ .

**Table I.**  
Means, standard  
deviations, and  
intercorrelations of  
interpersonal helping,  
self-sacrifice, trust in the  
leader and organizational  
identification, Study 2

	<i>M</i>	<i>SD</i>	<i>IH</i>	<i>SS</i>	<i>TL</i>	<i>OI</i>
Interpersonal helping ( <i>IH</i> )	1.92	0.67				
Self-sacrifice ( <i>SS</i> )	3.39	0.89	0.26			
Trust in the leader ( <i>TL</i> )	3.09	0.86	0.32	0.66		
Organizational identification ( <i>OI</i> )	3.04	1.05	0.31	0.29	0.31	

**Notes:**  $n = 198$ ; all correlations are significant at  $p < 0.001$

Finally, to test our hypothesis regarding mediation, we conducted a regression analysis in which self-sacrifice, and both trust and organizational identification as covariates, were entered as predictors of interpersonal helping. This analysis showed that trust,  $\beta = 0.18$ ,  $p < 0.05$ , and organizational identification,  $\beta = 0.24$ ,  $p < 0.005$ , were positively related to interpersonal helping. Self-sacrifice, however, was not significantly related anymore to interpersonal helping,  $\beta = 0.08$ ,  $p < 0.33$ . This reduction of the effect of self-sacrifice is significant ( $z = 2.44$ ,  $p < 0.01$ ) (Sobel, 1982), suggesting that the relationship of leader self-sacrifice with follower interpersonal helping is mediated by trust in the leader and organizational identification.

## Discussion

Leader self-sacrifice on behalf of the collective, a category of leader behavior that is receiving increasing attention in theory and research, has been advanced in prior analyses as an effective way to stimulate follower cooperation. Case studies as well as quantitative tests provided support for this proposed relationship, but research has really only begun to explore the processes underlying the effectiveness of leader self-sacrifice (De Cremer and van Knippenberg, 2002).

We proposed that follower trust in the leader and identification with the collective plays an important role in translating leader self-sacrifice into follower cooperation. Results of an experiment and a correlational survey supported our predictions. Consistent over two studies using different methodologies and conducted in two different countries, leader self-sacrifice was positively related to cooperation, and this relationship was mediated by followers' trust in the leader (Study 1 and 2) and organizational identification (Study 2). Research in leadership, and charismatic/transformational leadership in particular, has been criticized for providing little information about the mechanisms through which leader behavior influences group member behavior (Hunt, 1999; Podsakoff *et al.*, 2000). The finding that trust and organizational identification mediated the effect of self-sacrifice on cooperation thus is a step forward in uncovering the processes through which leader behavior affects group member cooperation.

Both trust (Pillai and Meindl, 1998; Podsakoff *et al.*, 1990) and identification (Shamir *et al.*, 1993; van Knippenberg and Hogg, 2003) have been proposed to mediate the effectiveness of leader behavior. Until now, however, trust had not been related to leader self-sacrifice. Moreover, the present study provides the first experimental evidence for the role of trust in (charismatic/transformational) leadership effectiveness (even though it should be noted that a mediational analysis itself is in part correlational). Where the mediating role of identification is concerned, the present findings provide an important first replication of De Cremer and van Knippenberg's (2002) findings (for non-mediational evidence that charismatic and transformational leadership is positively related to follower identification, see Conger *et al.* (2000) and Shamir *et al.* (1998)). In an important extension of both the earlier work on the role of trust and the role of identification in leadership effectiveness, the present study is the first to test the mediating roles of trust and identification simultaneously. The importance of this test lies in the fact that it is not self-evident that trust and identification have independent effects. Trust could also be argued to flow from identification (group-based trust; Kramer, 1999), or identification could be argued to

flow from trust. The present findings thus are important in supporting our independent effects model.

The present study adds in a number of ways to the evidence that trust and identification are important processes in leadership effectiveness. This is not to say, however, that trust and identification are the only processes that matter to (charismatic and transformational) leadership effectiveness. Other studies have for instance pointed to the role of self-efficacy and collective efficacy (Shamir *et al.*, 1993; Shea and Howell, 1999), Kirkpatrick and Locke (1996) suggest a role for goal-setting, and Yorges *et al.* (1999) propose a role for attribution processes (Meindl *et al.*, 1985). As the present study shows, the one mediational process does not preclude the other, and it would seem an especially worthwhile avenue for future research to test the role of a broad range of potential mediators of leadership effectiveness in conjunction.

In this respect, it is also important to note that not all potentially mediating processes will be associated with all effective (charismatic and transformational) leadership behaviors. Podsakoff *et al.* (1990) for instance found that trust mediated the influence of some but not all aspects of transformational leadership, and Shamir *et al.* (1998) found that not all aspects of charismatic leadership in their study were related to follower identification. In a similar vein, it stands to reason that some leader behaviors (e.g. displays of self-confidence; Conger and Kanungo, 1987) are more strongly related to follower self-efficacy than others. Future research would, therefore, do well not to work from the assumption that what has been shown to mediate the effects of one aspect of (charismatic and transformational) leadership also mediates the effects of other aspects, but rather should aim to develop and test theory about the differential relationships between different aspects of effective leadership and different mediating processes.

A major strength of the present research is that it combined two different research methods. Even though experiments are not conducted in a quest for external validity (Brown and Lord, 1999) and combinations of laboratory experiments and field research typically suggest that the lab and the field yield similar results (Dipboye, 1990), reports of experimental research may always elicit questions of external validity among their readership. Accordingly, an important aspect of the present study is that whereas Study 1 yielded experimental evidence with high internal validity, Study 2 replicated the findings from the experimental study in the field, countering this potential criticism. Conversely, Study 2 might be criticized for being correlational in nature (i.e. rendering it mute in matters of causality), for relying on ratings of leader behavior, and for the fact that all variables were assessed in a single questionnaire (i.e. making common method variance a potential problem). Yet, in combination with the experimental design of Study 1, these concerns are less of a threat to the overall conclusions of the present research.

Furthermore, the fact that we used two different samples (i.e. undergraduate students and industrial employees) also adds strength to our present approach. Indeed, the fact that similar results were found across these two studies enhances the generalizability of the present findings. In addition, it is noteworthy that precise earlier research on self-sacrifice demonstrated that usually few differences emerge between samples of students and employees (Choi and Mai-Dalton, 1999; De Cremer and van

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Knippenberg, 2002, 2004; Halverson *et al.*, 2004); pointing out that self-sacrificial leadership is suited to be investigated by means of a variety of research methods.

Even so, the present study is not without its limitations. It would for instance seem valuable to extend our research with measures of cooperation that more explicitly focus on interaction and task interdependence. In Study 1, we focused on cooperation in situations of outcome interdependence (i.e. the degree to which the outcomes that an individual receives depends on own and other's decisions; Wageman, 1995), which does not necessarily require that people interact to cooperate (Komorita and Parks, 1994). The same thing applies to our measure of interpersonal helping in a way that although it typically requires interaction, it does not require that people are interdependent in their task performance. We would predict that our conclusions also hold in situations where cooperative interactions are required (i.e. task interdependence; Wageman, 1995), but this is something for future research to determine, and for the time being the fact that we did not explicitly focus on situations of task interdependence should be regarded as a limitation to the conclusions of the present study.

In addition, it would also be valuable for future research to conduct a longitudinal study to explore whether the mediating effects as found in the present study can be considered as immediate effects or effects that evolve over time. Indeed, it may well be that collective identification and trust invariably develop with longer time periods, which may suggest that the display of self-sacrifice behavior will only be effective for leaders who are affiliated with the organization for a longer period of time. However, it has to be noted that this effect of increased collective identification over time may not occur. That is, recently, Henry (2000) found that collective identification did not increase and even showed a decreasing trend when using longitudinal designs to study cooperation in real-life social dilemmas (i.e. a paradigm also used in our Study 1). A possible reason for this is that collective identification can be installed quickly as it is quite often based on processes of social categorization and as such subtle changes in the comparisons made within the work organization (e.g. between individual employees versus between different organizational departments) can enhance identification with the own collective immediately, consequently enhancing followers' tendency to see the own goals and the goals of the collective as interchangeable resulting in cooperation (De Cremer and Van Vugt, 1999; van Knippenberg, 2000). Future research is, therefore, needed to see whether the present results are also found over time.

Also, despite the fact that a strength of the present study is that it employed different operationalizations of cooperation (i.e. contributions in a public good dilemma and interpersonal helping), thus testifying to the generalizability of our results, a limitation is that these were self-reported measures of behavior rather than direct measures of behavior. Even though related research has shown that leader self-sacrifice has an effect on actual behavioral measures of cooperation (De Cremer, 2002; De Cremer and van Knippenberg, 2002; van Knippenberg and van Knippenberg, 2005), including direct measures of behavior in future research would, therefore, be an important extension of the current study.

## Conclusion

Motivating individuals to go beyond self-interest and to cooperate towards collective goals and interests is of major importance for the internal functioning of groups and

organizations (Smith *et al.*, 1995). The present study adds to our growing understanding of the role of leader self-sacrifice in this process. It becomes increasingly clear that self-sacrifice for the collective may be an important aspect of leadership that moves people beyond self-interest, as such promoting the management of group cooperation (Study 1) and citizenship behavior (Study 2). At the same time, it is also evident that there is still much to learn about the workings (e.g. trust and identification) of leadership behavior such as leader self-sacrifice. As such, the process-oriented research necessary to truly understand what makes self-sacrifice and other aspects of (charismatic) leadership effective, therefore, poses a major challenge for leadership research.

As a practical consequence, it is thus clear that making managers and supervisors aware of the potential benefits of self-sacrifice for the welfare of the organization is urgently needed. This is indeed important, particularly since organizations are becoming more focused on involving employees in decision-making, they have also become more concerned about and responsive towards the needs, well-being, and self-definition of their employees (McAllister and Bigley, 2002; Pfeffer, 1998), consequently asking for effective leader and management styles that can respond to these concerns. One such style is clearly self-sacrifice as research on this leadership style shows that displaying self-sacrifice creates a "source of psychological comfort for the followers" (Waldman *et al.*, 2001, p. 136); as witnessed by its effects on trust and identification. Therefore, organizations need to be able to implement leadership based on self-sacrifice. One possible way to do this is to train managers more effectively in how they can clearly communicate the goals that they personally value and wish to pursue to their employees. In order to do this in an effective way it is, therefore, also important for leaders to be able to be self-reflexive to know what they consider to be worthy of effort and how this is all perceived by the rest of the organization; practices that also lead to healthy individuals in well-functioning organizations (de Vries, 2001).

#### Note

1. A classic example is Lee Iacocca's decision as CEO of Chrysler to set his annual salary to US \$1 in a time of crisis to prove his commitment to Chrysler's plight, and to elicit similar commitment from Chrysler's employees.

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